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Risk-Return Analysis of Select Tax Saving Mutual Funds

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ABSTRACT: The Indian stock market has been in existence since 1875 bestowing lesser range of instruments from companies to invest their money through general public. Since then, the awareness of investment has gained momentum amongst the general public and investors have become curious and intuitive to park their funds in some instrument to attain or gain profit or handsome returns from companies and the market. With the advent of Unit Trust of India (UTI) being formed during 1964 by a special legislature to function under the regulatory and administrative control of Reserve Bank of India (RBI) , it brought an innovative financial thought to the mechanism of investment by investors. Mutual Fund industry boosted the investors' confidence that upheld capital appreciation, protection, tax burden and promoted financial stability. The researcher attempted to analyse the risk and returns of select tax savings scheme of mutual funds and point out the best tax saving mutual fund amidst the 11 selected funds using parameters like standard deviation, beta, sharpe ratio and treynor ratios for a period of 90 months from 2016 to 2023 taking Net Asset Values published by AMFI and the closing values of Bombay Stock Exchange Standard & Poor (BSE S & P) Sensex and also by using MS Excel for computing all the parameters manually rather than the already published data by many other sources. It was examined that Quant Tax Direct Plan (Growth Option) has good indicators to prove its performance. The research findings can aide investors' decision with numerous benefits ranging from savings, returns, gains and risk management.

Keywords: Mutual Funds, Performance Analysis, Risk and Return Analysis, Sharpe Ratio, Tax Saving Scheme, Treynor Ratio

INTRODUCTION

Savings have become key financial commitment of the income earning individuals exclusively among the middle-class income earning societal background. Finance is not only considered as the lifeblood for a business set-up of any nature and kind (Kumari, 2013) but for income earning individuals as well (Narendra Singh Bohra, 2021). Similarly, for a small to moderate income class

individual his significant task would be to invest considerably a minor quantum of their income in a venture which would give them moderate returns on the investment in comparison to fixed deposits with bank. Among various sources of investment and instruments available in the finance market, Mutual Fund investment is considered as a vital instrument in common parlance with insurance policies and fixed deposits (Panpaliya et al., 2020).

Mutual fund is a financial apparatus where it contains a mixture of or a combination of varied securities and it permits investors to pool their money for any pre-determined time period to achieve their investment goal (Udhayasankar & Maran, 2018). Mutual fund is an organisation established in the nature of Trust or a company which receives or accumulates money from various individual who are intending to save some money on a regular basis with an investment goal (Babbar & Sehgal, 2018). The mutual fund would also involve themselves in the role of an intermediary providing all kinds of services to the investor ranging from opening of Mutual Fund account, portfolio management, advisory services, creating awareness and so on.

Investing in mutual fund brings out various benefits (Das, 2018) for the investor in the following manner:

- Providing wider arena of schemes to invest;
- Involvement and management by professionally trained personnel;
- Maintaining safety and credibility of funds by highly intellectual fund managers;
- Diversification of risk taken by investors;
- Protecting the interest of the investors – thereby attracting prospective investors;
- Automatic collection and reinvestment of dividend pay-out;
- Ensuring transparency in all transactions;
- Providing information at all times which enables in timely decision;
- Enabling timely liquidity of the investment made.

Types of Mutual Funds:

(Ratnaraju & Madhav, 2016) According to the Association of Mutual Funds in India (AMFI), on the wholesome Mutual Fund schemes can be of the following:

1. **Open Ended Schemes** – The investor can subscribe / purchase units of any type of mutual fund and can also redeem / sell the units at any point of time. Open ended schemes do not have a fixed closure date and relies upon the mindset of the investor. These funds give an edge over other schemes as they provide higher level of liquidity to the investor (Prem Shankar Maurya, 2014).
2. **Close Ended Schemes** – Unlike the open-ended scheme, close ended schemes have an in-built or a structured time frame upon which an investor can subscribe or purchase the units of mutual funds during a New Fund Offer and can redeem after the fixed time frame as laid down in the scheme.
3. **Actively Managed Funds** – A professionally experienced manger (usually fund manager) takes care of the Mutual Fund and makes timely decisions on the stocks that needs to be bought or sold or held depending upon his rationale and analytical research. This mechanism

helps the investor to gain with maximum returns from fund that out-performs the benchmark returns (Shreekant et al., 2020).

4. **Passively Managed Funds** – The fund performs in accordance with the index of the market. The net asset value of the fund moves in proportion to the rise or fall in the market index. These funds generate the same level of returns as the market (Hada et al., 2016).
5. There are few other types of mutual fund which are categorised on the basis of Risk-Return trade off. They are:
    a. Liquid Fund;
    b. Ultra-Short-Term Fund;
    c. Arbitrage Fund;
    d. Capital Protection Orientation Fund;
    e. Short Term Income Fund;
    f. Fixed Maturity Plan;
    g. Long Term Income Fund;
    h. Gilt-Edged Fund;
    i. Monthly Income Plan;
    j. Balanced Fund;
    k. Gold ETF;
    l. Index Fund;
    m. Equity Fund;
    n. Tax Saving Fund, and
    o. Thematic / Sectoral Fund.

Tax saving mutual fund famously or alternatively known as Equity Linked Savings Scheme predominantly invests the resources pooled from the general public to gain dual benefit of reducing tax burden to a restricted limit and gives a potential appreciation in the capital invested (Panigrahi. et al., 2020). As per Securities Board of Exchange of India, 80% of the amount pooled shall be put in equities and which has a lock-in period of three years (Mishra & Mishra, 2020). Every financial instrument performs in a significant manner. The relationship between the expected return generated by a fund or instrument and the risk of investing in the same is generally measurable and done using Capital Asset Pricing Model (CAPM). This study uses CAPM approach which explicitly tenders the relationship between risk and return (Pramono et al., 2022).

Statement of the problem:

Mutual Funds are the most sought after investment among the salaried class people in India (Thomas et al., 2018). Among the various types of mutual funds that are available in the market, investors opting to invest in Tax Saving Equity Linked Savings Scheme (ELSS) enjoy a higher edge over other kind of mutual funds with time ability of timing the market and power of compounding in the long run. These funds usually generate higher returns over the long-term and also provide the benefit of reduction in taxable income as investment in ELSS attracts deduction under section 80C. This study envisions to analyse the risk and returns of Tax Saving Equity Linked Saving Scheme among the selected 11 schemes for a period of 90 months.

Review of Literature

A critical analysis comparing the performance of top 10 equity mutual fund schemes predicted HDFC Mid Cap Opportunities Fund (G), Birla Sun Life MNC Fund (G) and Quantum Long Term Equity (G) as the best mutual fund schemes and Birla Sun Life MNC Fund (G) had the highest expense ratio. HDFC Mid Cap Opportunities Fund (G) had the least expense ratio and was also declared less risky when standard deviation, beta and r-square values were taken into consideration (Pal & Chandani, 2014).

The risk-return relationship for 10 years from April 2005 to March 2015 analysed using monthly adjusted NAV, return of the scheme with funds return and market return pictured that 10 out of 20 schemes showed good performance and only a few mutual fund schemes proved contrasting performance on account of unprofessional management, inability of the fund manager to read the market conditions, selection of stock being poor and inadequate diversification and so on (Chauhan, 2020).

Performance and evaluation of SBI mutual funds (equity and debt schemes) portrayed good performance in schemes like SBI magnum global fund, SBI tax advantage fund and SBI monthly income fund are the front runners compared to other similar funds wherein SBI infrastructure fund, SBI magnum children benefit and SBI insta cash fund were lagging behind due to lower NAVs, value addition and deviation (Madhavi, 2019).

Risk and return analysis of select equity linked savings schemes for the period from 2012 to 2017 using standard deviation, co-efficient of variation, beta values, sharpe ratio, treynors ratio and Jensen's alpha showed that majority of the selected schemes exceeded the benchmark indexes due to professionally managed scheme and efficient handling by fund managers. It was purported that Indian asset management companies had the capacity to earn higher returns in comparison with the benchmark returns on an average (Pratap, 2020).

The annualised returns of growth schemes in comparison with other select mutual fund schemes during the years 2010 to 2019 envisaged that growth and balanced schemes of HDFC, Aditya Birla and Nippon India showed outstanding performance vis a vis other AMCs and in the case of Debt schemes Nippon India and SBI mutual fund has outperformed other funds. As far as the return comparison of growth scheme, Aditya Birla ranked first, followed by SBI focussed fund, Nippon India and ICICI prudential value discovery fund has outperformed during the research period (M. V. Sharma, 2020).

(Ahmad Pandow & Ahmad Butt, 2017) found from their study carried out on risk and return analysis of mutual funds India that, performance of fund managers is considered as the prime factor on the investors interest and growth of mutual fund industry as well. It is the aim and goal of all the fund managers to work for the promotion of investors' interest by considering higher returns with minimum risk. Their research also laid that the performance of mutual funds is defined in terms of returns, risk adjusted returns or benchmark comparisons.

An article scripted by (Sahai, 2020) about the variations in the performance of mutual funds by taking into comparison a few selected 34 equity schemes in India for the period between 1995 to 2020 using tools like average returns, standard deviation, beta, coefficient, sharpe ratio, treynor ratio and jensens alpha. The findings revealed that 32 equity schemes have shown returns higher than the average returns, 31 schemes were found to be less risky, 15 schemes have a positive beta less than one and overall, all the schemes provided higher returns according to sharpe and treynor. They also depicted that investor should revisit or tune their financial goal from time to time according to the market movement and government regulations.

The risk-return evaluation of the select eight equity mutual funds envisages that their performance in the highly volatile market is noticeably good and investors should consider risk and return primary as the important factor for investment followed by safety and liquidity (Murthy et al., 2022). The usefulness of sharpe ratio will substantiate investors decision towards choosing the mutual fund scheme that generates higher returns with diversified investment and less risky investment using treynors ratio.

The returns produced by mutual funds are in correlation with the volatility of the market as the index movement significantly impacts the performance of all mutual funds in India. Investment in equity based mutual funds are most preferred by investors who tend and have the ability to take more than moderate risk in-order to gain from the advantage of the index volatility as depicted for ICICI Blue Chip Fund among the five selected large cap and blue chip funds taken for analysis (Khurana & Bhatia, 2023).

Objectives of the study

The researcher has undertook to carry the study on the following objectives:

1. Examining the risk and returns of select equity linked savings schemes of mutual fund.
2. Comparing the performance of the select tax savings schemes according to the selected performance parameters.
3. Identify the best tax savings scheme among the 11 select shemes.

METHOD

Research methodology is usually understood as an approach used to solve a problem or to find a solution to a defined problem in a systematic manner. The approaches to each and every problem depends upon the type of study undertaken by researchers (Dewasiri et al., 2018). Descriptive research method is used in this study. To observe and scrutinise the performance, 11 equity linked savings scheme of mutual funds across different asset management companies are selected, and the Net Asset Values (NAVs) are collected using secondary data sources. The daily NAVs are used to find out the returns and comparing the same with various other performance parameters for evaluation.

Data Sample

This study is carried out for a period of 90 months or 7.5 years starting from 1st April 2016 to 31st October, 2023 which is understood as long-term and only the following 11 schemes were selected for further analysis:

1. Quant Tax Direct Plan – Growth;
2. Axis Long Term Direct Plan – Growth;
3. Kotak Tax Saver Direct Plan – Growth;
4. Invesco India Tax Direct Plan – Growth;
5. DSP Tax Saver Direct Plan – Growth;
6. Franklin India Taxshield Direct Plan – Growth;
7. HDFC Tax Saver Direct Plan – Growth;
8. Mirae Asset Tax Saver Equity Direct – Growth;
9. ICICI Prudential Long Term Equity Fund Direct – Growth;
10. TATA India Tax Savings Direct – Growth;
11. NIPPON India Tax Savings Direct – Growth;

Data Collection Method:

In order to arrive at a comparative judgement on the returns, data has been collected from the websites of AMFI, RBI, S&P BSE Sensex and other reliable online open source like value research online website, yahoo finance, Investopedia and so on. The daily NAVs of each of the selected mutual funds are collected in order to compute the returns of the mutual funds and for other comparison parameters.

Tools / Parameters for Analysis:

In order to understand, study, identify and analyse the risk and returns of selected Tax Savings mutual funds, the following financial tools are used:

1. **Return of the Product / Portfolio (Rp)**:
   Any profit or gain that is earned over and above the amount invested is perceived as returns. Here, in this research, the return of all the schemes is determined by dividing the closing NAV for the study period with the opening NAV for the study period minus 1 (K. Sharma & Tripathi, 2023). Returns are always expressed in terms of percentage. The returns are annualised to determine the average returns of the mutual fund.
   Formula = $((Closing\ NAV)/(Opening\ NAV)) - 1 * 100$

2. **Standard Deviation (SD):**
   Standard Deviation is used to measure the level of risk of a fund. Alternatively, it also helps the investor to understand the volatility of the fund / the investment he has made (SEI, 2014). It is a performance indication in correlation to that particular Mean of the fund / scheme. This tool helps to evaluate and understand how the returns would vary (rise higher or fall lower) from the mean. The standard deviation for the entire returns of the product / fund is determined by using stdev.p formula in MS excel by taking the square root for the average number of trading days in a year.
   Formula = $[1/n\ (Xi - X)\text{^}2]\ \text{^}\ ½$

Formula in MS Excel = stdev.p(daily_returns)*sqrt(avg_no_of_trading_days_in_a_year)

3. **Beta:**

The beta value of a mutual fund generally indicates the risk of an investment made in financial instrument in relation to the benchmark market of that investment (Chong et al., 2018). It also indicates the volatility level of the mutual fund in relation to the benchmark market. If the determined value of beta is more than 1, then the scheme is said to be more volatile than its benchmark and vice versa.

Formula = $(R_p - R_f) / (Benchmark\ Return - Rf)$

Formula in MS Excel = slope(known_ys,known_xs)

Wherein,

Known_ys are the daily returns of the benchmark (i.e.,) S & P BSE Sensex.

Known_xs are the daily returns of the fund / scheme

4. **Risk Free Rate (Rf):**

Investment in any financial asset carries risk depending upon the nature of the asset. There are very few assets that carry very minimal amount of risk or at times no risk namely Fixed Deposits, Bonds, Treasury Bills, Commercial Papers, Government Securities, etc., Here the researcher, has considered the 365-Day Treasury Bill (Primary) Yield issued by RBI as the risk-free rate. As the rate of interest varied on a monthly basis the rates so collected is annualised and the average annualised rate of interest for the bill is taken into consideration as the risk-free rate for the purpose of this analysis.

5. **Sharpe Ratio:**

Sharpe Ratio evaluates the risk and returns together of a mutual fund and helps in selecting / choosing a fund that generates higher returns with optimal amount of risk taken by the investor (Pav, 2016).

Formula = $(R_p - R_f) / \sigma_p$

Rp = Average returns on a portfolio

Rf = Average Risk-free return

σp = Standard Deviation of a portfolio

6. **Treynor Ratio:**

Treynor ratio is used to measure the excess returns attained per unit or risk on a portfolio / mutual fund (Hubner, 2005). Higher the ratio has to be understood as the investment / portfolio fetching good returns for the investor. The formula for determining Treynor ratio is as follows:

Formula = $(R_p - R_f) / \beta_p$

Rp = Average returns on a portfolio

Rf = Average Risk-free return

σp = Beta value of a portfolio

RESULT AND DISCUSSION

Analysis on the select 11 Mutual Funds was carried taking into the consideration all the tools and parameters enlisted above and using Microsoft Excel spreadsheet. The tools measure the risk, volatility, return, benchmark returns with the intention to determine the performance of Tax Savings Mutual Funds. The average annualised risk-free rate of interest for the 365-Day Treasury Bill (Primary) Yield was collected from the published secondary source (i.e.,) from the website of RBI. The monthly rate of interest declared by RBI is collected and the average risk-free rate for the 90 months period is determined as 5.78%. It has to be understood that risk-free rate is that rate at which an investor earns a return on his investment without much risk or no risk.

Table No.1
Mutual Fund Analysis using Performance Parameters

Name of the Mutual Fund	CAGR (Rp)	SD	Beta	Sharpe Ratio	Treynor Ratio
Quant Tax Direct Plan	30.18%	17.29%	0.83	1.41	0.30
Axis Long Term Direct Plan	17.26%	15.66%	0.80	0.73	0.14
Kotak Tax Saver Direct Plan	21.69%	15.13%	0.85	1.05	0.19
Invesco India Tax Direct Plan	19.69%	15.65%	0.90	0.89	0.15
DSP Tax Saver Direct Plan	21.55%	15.88%	0.29	0.99	0.55
Franklin India Tax shield Direct Plan	18.06%	15.77%	0.90	0.78	0.14
HDFC Tax Saver	18.53%	15.99%	0.90	0.80	0.14
Mirae Asset Tax Saver Equity	25.75%	16.27%	0.94	1.23	0.21
ICICI Prudential Long Term Equity Fund	18.61%	15.10%	0.85	0.85	0.15
TATA India Tax Savings	20.35%	16.41%	0.94	0.89	0.16
NIPPON India Tax Savings	14.35%	17.65%	0.96	0.49	0.09

Source: https://www.bseindia.com/, https://www.amfiindia.com/net-asset-value/nav-history, computation done using MS Excel Spreadsheet.

Table No.2
Average Number of Trading Days

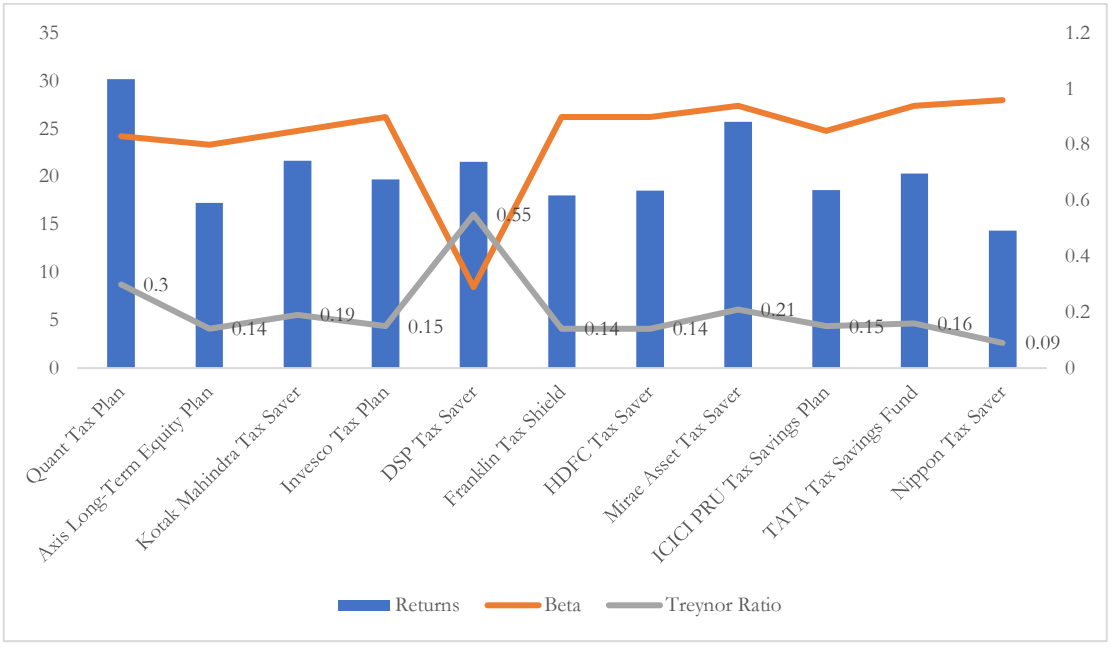
Year	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Average
Trading Days	247	245	247	245	248	247	248	142	233.625

Source: Computed Data using MS Excel Spreadsheet.

Chart No.1
Line Chart Showing Returns, SD and Sharpe Ratio

Source: Computed using MS Excel

Chart No.2
Line Chart Showing Returns, Beta and Treynor Ratio



Source: Computed using MS Excel

The benchmark returns are computed by taking the daily closing indices of BSE S & P Sensex for 90 months from 1st April 2016 till 31st October, 2023. It is evident from Table No.1 that 10 out of 11 mutual funds outperformed the benchmark / expected return. Based on the returns, it can be understood that Quant Tax Direct Plan – Growth has outperformed among the select 11 mutual funds while Nippon India Tax Savings scheme has underperformed in comparison with the benchmark returns.

The standard deviation of mutual fund indicates the returns, a fund may go up or down in correlation with its average returns. Table No.1 says that Kotak Mahindra Tax Saver Mutual Fund and ICICI Prudential Tax Saving Mutual Fund are having a lower standard deviation which

denotes that the fund is less volatile wherein Nippon India Tax Saving fund and Quant Tax Plan is more volatile. Sharpe Ratio usually denotes the additional return generated for every 1% of risk taken by the investor. Quant Tax Direct Plan (1.41) and Kotak Mahindra Tax Saver Plan (1.05) has the highest Sharpe Ratio which denotes that the fund has the ability to outperform among the select 11 funds, wherein, Franklin Templeton Tax Shield Plan (0.78) and HDFC Tax Saver Mutual Fund (0.8) has the ability to generate more than 0.75% of the returns for every 1%. Also, it depicts that Nippon India Tax Savings Scheme (0.49) generate less than 0.5% of returns for 1% risk taken.

When only market risk is taken into consideration to evaluate the risk and returns performance of mutual funds, Treynor Ratio helps the investor to understand the returns generated by a fund with the amount of systematic risk taken by him. Table No.1 indicates that Quant Tax Direct Plan generates 0.30% of returns for every 1% of systematic risk taken by the investor, whereas Franklin India Tax Shield (0.14%), HDFC Tax Saver (0.14%) and Nippon India Tax Savings Fund (0.09%) generates lesser returns.

CONCLUSION

Mutual funds are always considered as a lucrative investment instrument for investors, who do not have time or interest or knowledge towards investing in Stock Market (Manjunatha, 2019). Investors who enter into mutual fund market to invest look into various factors such as capital protection, risk bearing capacity, returns, investment range, time period, tax savings before investing their hard-earned money in mutual funds. The launch of Mutual Fund Sahi Hai initiative launched by Association of Mutual Funds in India and the regulation by SEBI has given confidence among the investors to invest in mutual funds (Sharmacharjee, 2014). This miniature effort was taken to examine, understand and identify the performance of tax saving / ELSS mutual fund which can be an aide to investors in decision-making process. The findings highlighted that among the select mutual funds Nippon India Tax Savings Scheme is found to reach the Beta Level and can be chosen by investors who wish to take risk over a period of time. The beta of DSP Tax Saver denotes that the fund is less volatile and only renders moderate returns.

Finally, It was evident from the parameters / tools used like standard deviation, beta, sharpe ratio and terynor ratio - Quant Tax Direct Plan has given higher returns, performed well with both systematic and unsystematic risk among the select 11 mutual funds vice versa Nippon India Tax Savings scheme depicted to be more volatile, generating lesser returns taking into consideration systematic and unsystematic risk over a period of 90 months or 7.5 years. Hence, due consideration shall be given by investors on the performance parameters which comes in handy to measure the performance of mutual funds and to take investment decisions wisely.

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